

Special Article

China: En Route to a New Role in Global Agriculture

China's World Trade Organization (WTO) accession in December 2001, its new labeling regulations for bioengineered agricultural products, and questions about the actual size of its grain stocks are among the issues that have recently captured the attention of market analysts and policymakers. Potentially market-driving issues emanate from China on a regular basis, but beyond the headline-grabbing events is a larger picture of China's evolving role in agricultural markets.

As the 21st century opens, China stands ready to enlarge its role in global markets. After decades of political upheaval, poverty, and food shortages, China has emerged as one of the world's largest and fastest growing economies. Since the late 1970s, a historical tendency toward isolation and self-sufficiency has been replaced by an outward-looking reliance on foreign trade and investment as engines of economic growth. As its economy grows and develops, China will undergo unprecedented changes as it evolves from a largely rural, centrally planned, low-tech economy into one that is urbanized, and market- and consumer-driven.

China's potential as a market has long tantalized overseas merchants. While in some years it has been the world's largest customer for wheat, corn, cotton, and soybeans, its imports have fluctuated considerably, and the overall level of agricultural imports seems below potential.

Given a population of 1.27 billion (4.5 times that of the U.S.) and limited endowment of cropland (75 percent that of the U.S.) and of other natural resources, one would expect China to rely on agricultural imports from more land-abundant countries to feed its people. Agricultural imports have grown slowly, especially in comparison with surging trade in manufactured goods. The agricultural share of China's imports fell from about 33 percent in 1980 to about 7 percent in 1999. According to WTO statistics, China had a modest \$2.9-billion deficit in agricultural trade in 2000 (agricultural imports minus agricultural exports), equivalent to about 1.3 percent of its \$225-billion overall trade surplus.

Considerable potential exists for China to become a larger and steadier customer for agricultural imports as it sheds its inward orientation, opens its markets to the world, and rationalizes the use of its scarce resources by importing goods that can be grown more efficiently overseas. China's role in agricultural markets will be shaped by a number of factors, including:

- pace of development;
- shift from central planning to markets in guiding production and consumption decisions;
- development of markets and related infrastructure and institutions; and
- impacts of trade on China's farmers, impoverished regions, and other vulnerable sectors that could, in turn, affect its trade policy.



Dennis Shields

Farmers, agribusiness managers, and policymakers around the world will need to carefully watch the complex process of development in order to assess China's likely policy changes and their impacts on world markets for agricultural products. With a rapidly growing economy and WTO membership as the latest step in the march toward global integration, China is poised to becoming a larger market for imported agricultural products.

Changing Patterns of Consumption & Production

The Chinese economy is reportedly growing at a rapid 7 to 8 percent annually. While it is difficult to verify the accuracy of China's national income statistics, there have been rapid improvements in living standards and striking changes in consumption habits. Economic growth will boost Chinese consumer incomes, purchasing power, and demand for food. With slowing population growth (less than 1 percent annually) and rising per capita income (6 percent real annual growth in urban areas), food spending is growing (although at a slower rate than the rise in income).

The composition of food demand is also changing as demand for meat, poultry, fish, fresh fruit and vegetables, and other high-value products grows faster than for staples such as rice, wheat, and traditional vegetables. After decades of limited consumption choices, China's emerging middle class is acquiring a taste for convenience and high-value foods, such as instant noodles, baked goods, exotic fruits, dairy products, fast food, and processed foods.

The food processing and food retail sectors have grown and developed rapidly, reflecting increased demand for convenience and quality. Chinese consumers are dining in restaurants more

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frequently, traveling more, and starting to demand foods with specific attributes. Consumer awareness of environmental protection, food safety, and health issues is emerging in China, reflected in recently introduced “green food” and organic standards, and heightened concerns about sanitation in meat-packing plants.

A large, low-tech, labor-intensive farm sector currently supplies most of China’s food needs, but whether it will be able to make needed adjustments in input use and product mix to meet the country’s growing and shifting food needs is not yet clear. The Chinese farm sector encompasses over 200 million small-scale household operations using little machinery and 1 worker for every acre of cropland. By comparison, the U.S. has less than 2 million farms operating on a cropland base 25 percent larger, with over 140 acres of cropland for every farm worker. Most Chinese farmers grow rice, wheat, or corn on small plots of land; grow a cash crop such as cotton, rapeseed, peanuts, or tobacco; maintain a vegetable plot; and raise a few head of livestock or chickens.

This traditional semisubsistence production structure will give way to a more commercialized farm sector in order to supply China’s growing and changing food needs. Production is shifting from food grains and basic vegetables toward meats, fish, fruits, refined vegetable oils, and processed foods. Emerging supermarket and restaurant chains require large quantities of standardized high-quality products, which are nearly impossible to procure from large numbers of small independent growers.

Meat production is one of the fastest changing components of China’s agricultural sector. Already producing nearly half of the world’s pork, China is also the world’s second-largest poultry producer and third-largest beef producer. The livestock sector is expected to grow further to supply the country’s growing demand for meat.

Traditionally, hogs and other livestock were produced in “backyard” operations, and fed with table scraps, waste, and aquatic plants. Today, production is shifting to larger, more commercialized operations using manufactured feeds. In 1985, traditional backyard production accounted for 95 percent of pork output, but that share is now down to 80 percent. A growing share of pork production is on household farms specializing in livestock (15 percent) and on commercial farm operations (5 percent). Foreign investors and other suppliers to fast-food restaurants, supermarkets, and export markets are contracting with large operations to procure poultry, meat animals, and dairy products.

Rapid growth and commercialization in China’s livestock industry will boost demand for feed grains and oilseed meals. Increased feed grain and oilseed plantings will probably displace some food grains, and, in the long run, China may have to rely more heavily on imported corn and soybeans to feed its expanding numbers of livestock. Growing demand for protein meals is partly responsible for the dramatic rise in soybean imports from \$75 million in 1995 to \$2.8 billion in 2001. The USDA baseline projects a doubling of Chinese soybean imports to reach 30 mil-

A Closer Look at China Issues

This article is based on a new ERS report, *China’s Food and Agriculture: Issues for the 21st Century*, which delves more deeply into issues that could affect the evolving role of China in world agricultural markets. It covers issues related to food consumption, marketing and transportation, international trade, agricultural policy, regional differences, biotechnology, input markets, rural development, and market information. A series of 13 articles prepared by ERS economists teamed with colleagues in universities and other institutions in the U.S., Canada, and China provides background information, assesses the current state of knowledge, and asks key questions that can be addressed by research.

lion tons by 2011/12. Corn imports are projected to grow from current minimal levels to 7.8 million tons annually by 2011/12.

Specialized household and commercial livestock operations will probably supply most of China’s growing demand for livestock products, but some analysts anticipate increased imports of meat. Other analysts argue that further commercialization of the livestock industry will make China competitive on international markets and that China may even become an exporter of meat products to Asian neighbors if food safety and sanitary requirements can be met.

The Evolving Role of Government

After several decades of central planning (from the 1950s through the 1970s), China now relies increasingly on the market to allocate resources following a series of policy and institutional reforms. Consumers, processors, and farmers make their own consumption and production decisions subject to market forces. In the early years of market reforms after 1978, Chinese farmers responded to price incentives by dramatically increasing production. Changes in market prices can have dramatic impacts on farmers’ planting decisions and production. For example, strong cotton prices in 2000/01 boosted cotton acreage to record levels, while declining prices in 2002 are expected to reduce cotton plantings considerably.

Market development is still proceeding, and some market functions, such as specification and enforcement of grades and standards, have ample room for improvement. In recent years, millers have been seeking higher quality wheat to make breads and rolls for urban consumers. Farmers, however, have been encouraged to grow high-quality wheat varieties, but the supply of domestically produced high-quality wheat has not grown fast enough to keep up with demand. There is reportedly a high demand for imported high-protein wheat to meet domestic millers’ demands.

Government policies and other institutions have yet to evolve fully. Farmers are free to sell their production on the market, and markets have arisen for this purpose. But some government bureaucracies cling to their planned-economy role. For example, high grain supply estimates from local governments are still

passed up to the provincial level and ultimately to Beijing, where they are used to assess supply/demand balance and prospects for imports and exports.

In a market economy, a government must provide supporting services such as reliable market information systems, transportation and market infrastructure, an agricultural finance system, and a modern legal system to clarify property rights, enforce contracts, and resolve disputes. Without the institutional infrastructure to provide these essential services, market development will lose momentum, and farmers' ability to take advantage of the international market opportunities will be limited.

Reduction of tariffs, quotas, and other border measures will have little impact on Chinese markets if imports are unable to penetrate market channels and reach consumers at competitive prices. Inefficient marketing systems can have the same trade-reducing effect as a tariff by adding to the cost of trade.

Lack of efficiency in China's marketing and distribution system reduces flows of both international and domestic interregional trade. Basic market infrastructure, including highways, railway track, storage, and refrigeration has grown dramatically over the past decade. However, lack of cold storage and port facilities still constrain both international and domestic trade. Marketing industries in China are relatively inefficient, with their markup accounting for more than 20 percent of the retail price of perishable products (much higher than in the U.S.). Marketing channels are often difficult to penetrate for foreign firms and for Chinese firms operating outside their home regions.

Trade Liberalization—How Liberal?

China's foreign trade has been liberalized considerably over the last two decades. But trade in a few strategic commodities, including imports of grains, cotton, tobacco, sugar, and fertilizer, remained tightly controlled through state trading enterprises (STEs), import and export licensing requirements, and unannounced import quotas prior to WTO accession.

Import and export decisions carried out by state trading monopolies were often guided by a policy of maintaining self-sufficiency

in basic foodstuffs. Domestic stock levels—considered a state secret and not announced to the public—have often motivated government purchases or sales of commodities. Concern about dwindling stocks in the mid-1990s led to massive imports of wheat and corn in 1995 and 1996, while a subsequent buildup of stocks led to a plunge in grain imports from 1999 to 2001.

China's stocks make up a large share of global stocks. Lack of information about the actual level of these grain stocks has created uncertainty about the global grain stocks-to-use ratio, an indicator used by traders and other market analysts in assessing supply-demand conditions.

As a WTO member, China has made wide-ranging commitments designed to make its trade system more transparent and to increase the role of market forces (AO April 2002). However, there are concerns that regulatory requirements could restrict the number of companies eligible to participate in international trade, and will use technical barriers—such as new biotechnology labeling requirements—to limit imports.

Restrictions on agricultural imports may protect farmers' income and preserve grain self-sufficiency in the short run, but insulating farmers from international markets prevents them from receiving signals that would push China's product mix toward the most efficient use of resources. In particular, land-intensive grain production is not well suited to China's limited arable land base, especially production of irrigated wheat in north China, where water supplies are dwindling. In contrast, China's vegetables, fruits, livestock, and processing industries—activities that require a great deal of labor and little land—are cost-competitive not only in the domestic market but also overseas.

Input Markets: A Work in Progress

Transforming China's agriculture into a commercial production sector will require consolidation of small farm operations; release of agricultural labor to industrial and service employment; and investment in land improvements, machinery, and human capital. Input markets will play a key role in this transformation. Yet, while market forces now play a strong role in most of China's economy, markets for agricultural inputs are weak,

Comparing China and the U.S.

Item	Unit	China	U.S.	China-U.S. ratio
Population ¹	Million	1,266	282	4.5
Cropland area ²	Million acres	320	431	0.74
Cropland per agricultural worker ³	Acres	1	140	0.007
Value of agricultural production ⁴	\$ billion	257	195	1.32
Agricultural exports ⁵	\$ billion	16.4	70.9	0.23
World rank ⁵	Number	9	1	
Agricultural imports ⁵	\$ billion	19.5	66.7	0.29
World rank ⁵	Number	8	1	

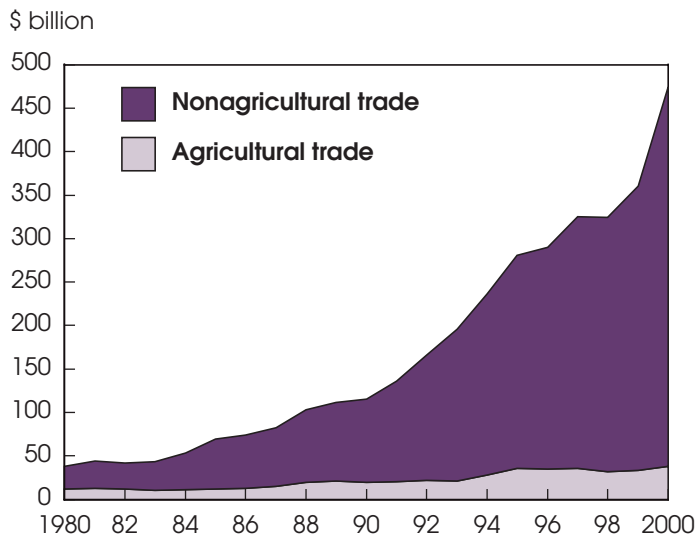
1. From population censuses, 2000. 2. From agricultural censuses, 1997. (2.471 hectares = 1 acre.) U.S. is total cropland. China is cultivated land. 3. Computed by ERS.

4. Value of crop and livestock production, 2000. 5. World Trade Organization statistics, 2000. USDA agricultural products for calendar year 2000: imports \$39 billion, exports \$51.2 billion. WTO estimates include fish, synthetic crude rubber, cork and wood, pulp and waste paper.

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China's Agricultural Trade Growing



Agricultural trade equals trade in primary products minus mineral products.
Source: Calculated by ERS from China Customs Statistics.

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highly regulated, or nonexistent. This is a serious bottleneck that could slow needed adjustments in the agricultural production sector.

Markets for land and water still retain features of China's collective agriculture period (roughly 1958-78). Rights to use farmland, owned collectively by villages, are allocated to households by village leaders. Land cannot be bought or sold by individual farmers and land rentals are relatively uncommon and mostly informal. Lack of land markets impedes the readjustment of land to its most efficient use.

Water is exploited as a commonly-owned resource, and its low marginal price leads to overuse. Despite low levels of water availability, irrigated agriculture has expanded rapidly in the North China Plain, where per capita water availability is only one-tenth the international average. The higher yields brought about by irrigation contributed to increases in grain production that have allowed China to maintain near self-sufficiency in grain, especially wheat. But this production level may not be sustainable as water supplies dwindle.

Capital investment in industry and infrastructure has been heavily concentrated in urban areas. Loans to farm households are available primarily through informal channels—from family members or savings clubs organized by village neighbors. Many farmers have invested in greenhouses, fish ponds, irrigation systems, and fruit orchards using financing from off-farm earnings and informal channels, and some villages have banded together to pool their land for industrialized agriculture, to dig wells, or to offer machinery services. Still, lack of rural credit greatly constrains investment in the agricultural sector.

One of the chief challenges facing policymakers is the task of promoting the flow of laborers from agricultural to nonagricultural work in order to raise rural per capita incomes. At least one third of rural laborers work at least part-time outside of farming, but greater transfer of labor to nonagricultural employment will be necessary to raise per capita rural incomes and commercialize the farm sector. Restrictions on rural migrants' movement to cities has limited the number of off-farm job opportunities available to rural residents, since nonfarm jobs tend to be concentrated in cities, especially in economically vibrant coastal regions. Low education limits job choices of rural residents, and poor access to markets and technology limits nonfarm job growth in rural areas.

Low investment in rural schooling and extension services is another case of urban investment bias that affects the movement of labor out of agriculture. Urban schools in China are subsidized by the government, but rural schools are financed by burdensome taxes and fees collected from village residents. As a result, rural schools are falling far behind their urban counterparts. A slowdown in the country's rural economy since 1998 has cut into tax revenue flowing from rural industries, making the problem more acute. Education, however, is key to lifting labor out of the low-technology agricultural sector and increasing the technological sophistication of agriculture itself. Lack of an effective rural education system hinders the movement of labor out of agriculture and slows the rise in agricultural labor productivity.

China as Customer & Competitor

As China grows, develops, and integrates with the world economy, it is likely to become an even larger and steadier customer for agricultural imports. Imports of grains and oilseeds will allow the country to feed itself without overburdening its limited natural resource endowment. Consumers growing demand for convenience and quality foods is likely to be satisfied largely through domestic production with some imports. At the same time, China could become a competitive exporter of fruits, vegetables, fish, meat, and poultry if its production were modernized, its marketing infrastructure improved, and food safety and animal health issues resolved.

Willingness to rely on markets to allocate resources will influence China's development and its role in world agricultural markets. Chinese policymakers seem committed to market reliance, and many now accept the logic of comparative advantage.

Despite China's commitment to trade liberalization, there is potential for nontariff barriers and regulatory requirements to periodically restrict imports and slow entry of foreign firms in order to balance competing interests within the country. However, China seems to be firmly on the path to market reliance and integration with the world economy, a path that will lead to greater world trade and more efficient use of global resources.

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